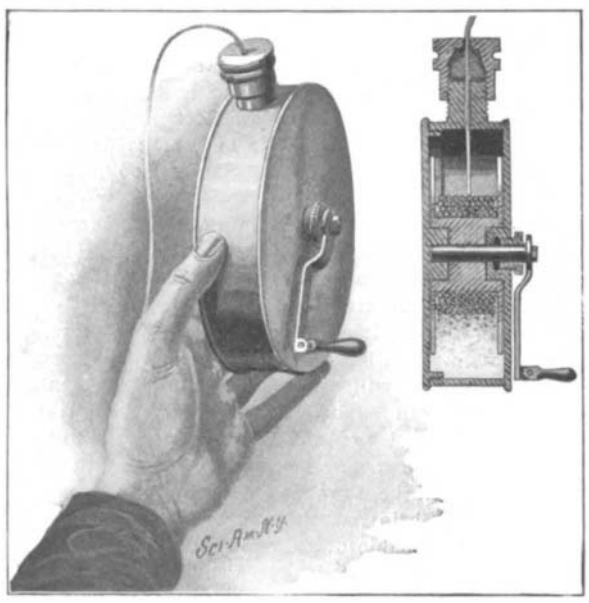
AN IMPROVED CHALK-LINE HOLDER.

In the accompanying illustration a chalk-line holder is represented which is of such construction that either a liquid or a solid may be employed to mark a line. Mr. Harry H. Wilson, of Nasel, Wash., is the inventor of the device.

The holder consists of a cylindrical casing, one head of which is integrally formed with the casing and the other removably secured in place so that the contents of the holder may be readily removed and cleaned. Within the cylinder a reel is mounted to turn, the line being wound around the reel in the usual manner. Upon the body of the holder-



A CHALK-LINE MARKER.

casing a threaded nipple is formed, upon which a cap-nut is screwed. Within the cap-nut a packing-block of gum is fitted. As our sectional view shows, the side wall of the bore in the cap-nut is conical in form; and the gum packing is similarly formed. The end of the line is passed through the nipple, packing-block and cap-nut.

To prepare the line-holder for service, the removable head is detached and a sufficient quantity of chalk is introduced within the casing. The removable head is then screwed back in place. The direct contact of the line with the chalk is sufficient to coat the line profusely. When the line is drawn out through the nipple, the gum-packing block will remove the excess of chalk, thereby preventing waste and enabling the line to make a better impression upon timber than would be possible if the line were too profusely coated.

The construction of the holder-casing is such that a water-proof liquid can be used instead of chalk; for the removable head when screwed into place is water-tight. If a liquid be used, a proper adjustment of the cap-nut will remove excessive moisture as the line is drawn out.

THE LOSCHWITZ SUSPENSION RAILWAY.

This new mountain railway was open to traffic May 6, and is the first of its kind for the conveyance of passengers. It runs from Loschwitz, a village on the banks of the River Elbe, about five miles from Dresden, to the top of the Rochwitz Heights, which command a most beautiful view of the Saxon capital. The railway is 820 feet long, and the grade is 32 per cent. It is constructed on the Langen system. The railways are carried by 33 hand-piers of varying sizes, the tallest being 49 feet high. Each car holds 50 passengers and weighs, when occupied, nearly 13 tons. Their shape and construction differ entirely from all other railway cars, even those used by the Barmen-Elberfeld Suspension Railway. The two trains of cars are connected by a steel cable 1.7 inches in diameter, and they are moved back and forth by two engines of 80 horse power each. Safety appliances are numerous and efficient. Visible and audible signals serve to regulate the arrival and departure of the trains, and these signals are operated both from the upper and lower stations. Each car is provided with a danger signal apparatus consisting of an alarm and a telephone which enables the conductor to communicate from any part of the road with the engine house. The car is provided with three brakes, two of which work automatically at the least slackening of the tension of the cable and stop the car. An indicating device in the engine room shows at all times the exact position of the cars, and a bell warns the attendant if the train is running too fast. An automatic brake, both at the top and lower station, is put into action by the arriving car, and stops it even if the engineer is careless. A round-trip ticket costs less than 6 cents; the journey requires only 3 minutes, and 15,550 passengers can be carried each way per day.

M. Santos-Dumont's New Balloon.

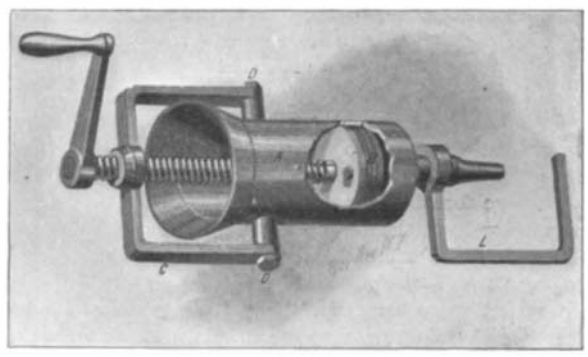
M. Santos-Dumont has been trying experiments with his new "Number 6" balloon. He proved that it had remarkable maneuvering qualities, but the new envelope seems to leak gas.

It is estimated that the cost of the food stores on the Antarctic supply ship "Discovery" amounted to $25,000. The supplies included 6,000 pounds of soup; 7,000 pounds of fish of all sorts; 16,000 pounds of roast, boiled and corned beef and mutton; 42,000 pounds of other meats; 4,500 pounds of ham and bacon; 11,500 pounds of vegetables, and 9,000 pounds of concentrated foods; 6,000 bottles and 4,000 pounds of dried fruits; 6,000 pounds of cheese, 42,000 pounds of flour, and 30,000 pounds of biscuit. There are also luxuries, says The New York Sun, such as real turtle soup, Devonshire cream, 10,000 bottles of champagne and spirits and wine, and 1,800 pounds of tobacco.

A GREASE-PUMP.

The introduction of grease of firm consistency into the oil cups and oiling holes of heavy machinery with the ordinary hand-pump is attended with some difficulty, especially in cold weather. Our English contemporary, The Iron and Coal Trades Review, recently published an account of a pump or syringe to facilitate such lubrication, to which we are indebted for the following description:

The pump consists of a bronze cylinder, *A*, furnished with a pointed nozzle in which a leather piston, *B*, can be moved up and down, by means of a screw-spindle. The screw at its upper end is furnished with a handle and it is guided by the stirrup, *C*. In order to fill the grease pump the piston is screwed out of the cylinder, and together with the stirrup, which moves around the fixed points, *D D*, is pushed



A SIMPLE GREASE-PUMP.

on one side. The angle-piece, *L*, is screwed on to the cylinder and serves to hold the pump on to the axle box. If, on the other hand, it is desired to lubricate hollow axles, the angle-piece, *L*, is screwed off and the nozzle inserted in the hole in the axle.

New Lamp for Lupus Cure.

Dr. Sophus Bang, manager of the laboratory belonging to Prof. Finsen, inventor of the light cure for lupus, has constructed, says a cable dispatch to the New York Sun, a special electric lamp, giving a feeble light, but which is extremely rich in chemical rays. The dispatch adds that Dr. Bang used metal instead of carbon poles. The bacteria-killing power of this lamp is ten times as great as that of an ordinary arc lamp, and a lupus patient requiring seventy-five minutes' treatment with the arc lamp will require only from three to five minutes' treatment with the new one, which costs only $15.

Test of the Roze Airship.

M. Roze made an ascent in his dirigible balloon at Argentueil, September 5. He reached an altitude of 65 feet and then descended. He found that his motor was too heavy and expects to make other trials at once.

SUSPENSION RAILWAY AT LOSCHWITZ, SAXONY—A TERMINAL.

THE LOSCHWITZ SUSPENSION RAILWAY—A CAR EN ROUTE.